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(71) Solicitante *(para todos los Estados designados salvo US)*: VODAFONE GROUP PLC [GB/GB]; Vodafone House, The Connection, Newbury, Berkshire RG14 2FN (GB).

(72) Inventores; e

(75) Inventores/Solicitantes *(para US solamente)*: SERNÁNDEZ ARPPE, Luis, Carlos [ES/ES]; María Zayas 7, 2° A, 28039 Madrid (ES). SALVADOR PÉREZ, Gloria, Monserrat [ES/ES]; San Romualdo 57, 1° L, 28037 Madrid (ES).

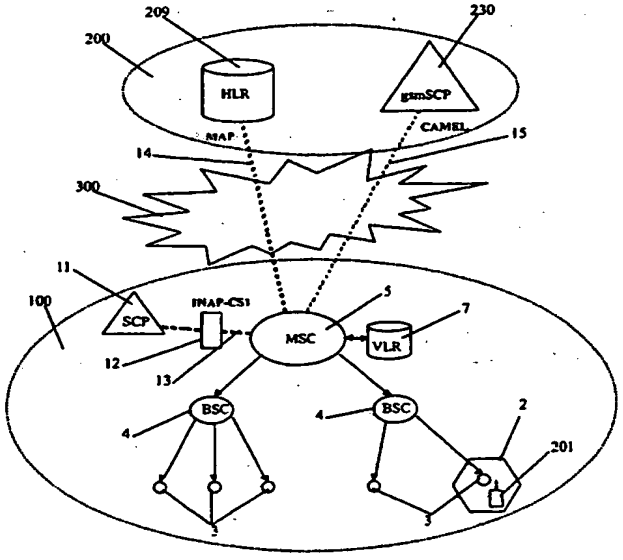
(74) Mandatarios: DÁVILA BAZ, Angel etc.; C/O Clarke, Modet & CO., Goya, 11, 28001 Madrid (ES).

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[Continúa en la página siguiente]

(54) Title: DIALLING ERROR WARNING SYSTEM AND METHOD

(54) Título: SISTEMA Y MÉTODO DE AVISO DE ERRORES DE MARCACIÓN



(57) Abstract: The invention relates to a dialling error warning system which is intended for users visiting a visited mobile telephone network (VPLMN) (100), whereby a visiting user denotes the user of a home mobile telephone network (HPLMN) (200) which is different from the visited mobile telephone network (100). The inventive system consists of: a first node (11) of the visited mobile telephone network (100), comprising means of analysing a number dialled by a user (201) and of determining if said dialled number fulfils at least one pre-determined error criterion; and means of sending a short message (SM) with a dialling error warning to the user if said dialled number fulfils at least one pre-determined error criterion. The invention also relates to a dialling error warning method.

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FIG. 1

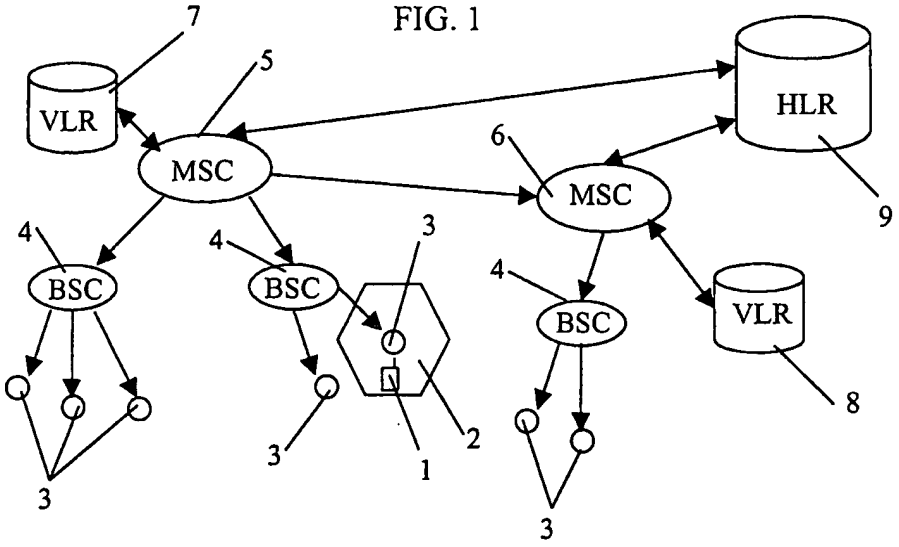
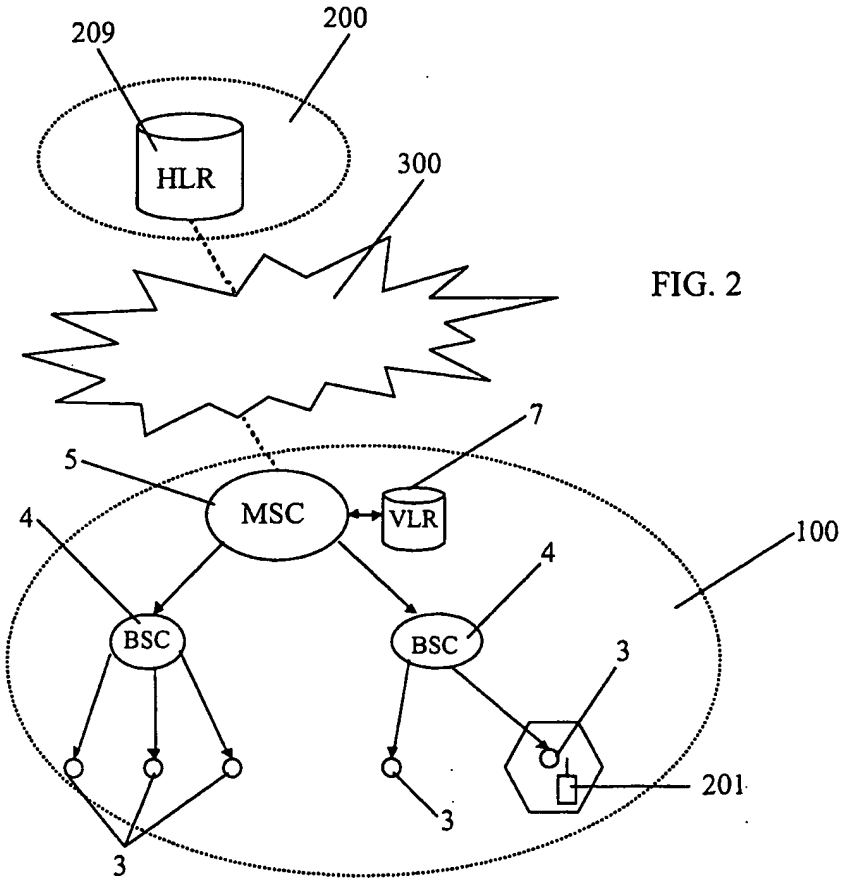

7
5
VLR
MSC
HLR
6
MSC
9
4
4
3
BSC
BSC
4
BSC
VLR
8
3
3
1
2
3

FIG. 2


209
200
HLR
300
7
5
MSC
VLR
4
100
4
BSC
BSC
3
201
3
3

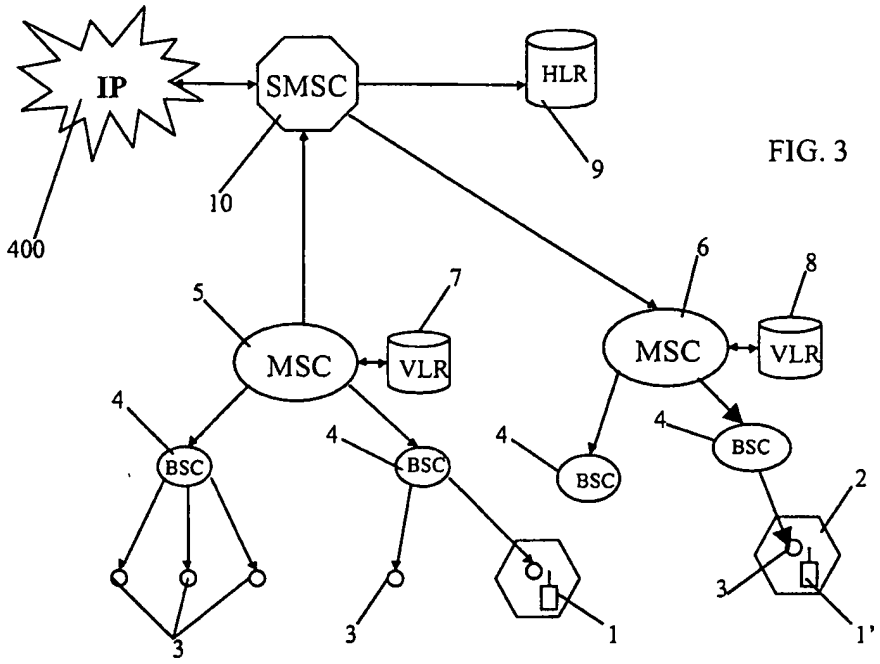

IP
SMSC
HLR
400
10
9
5
7
6
8
MSC
VLR
MSC
VLR
4
4
4
4
BSC
BSC
BSC
BSC
2
3
3
3
1
1'

FIG. 3

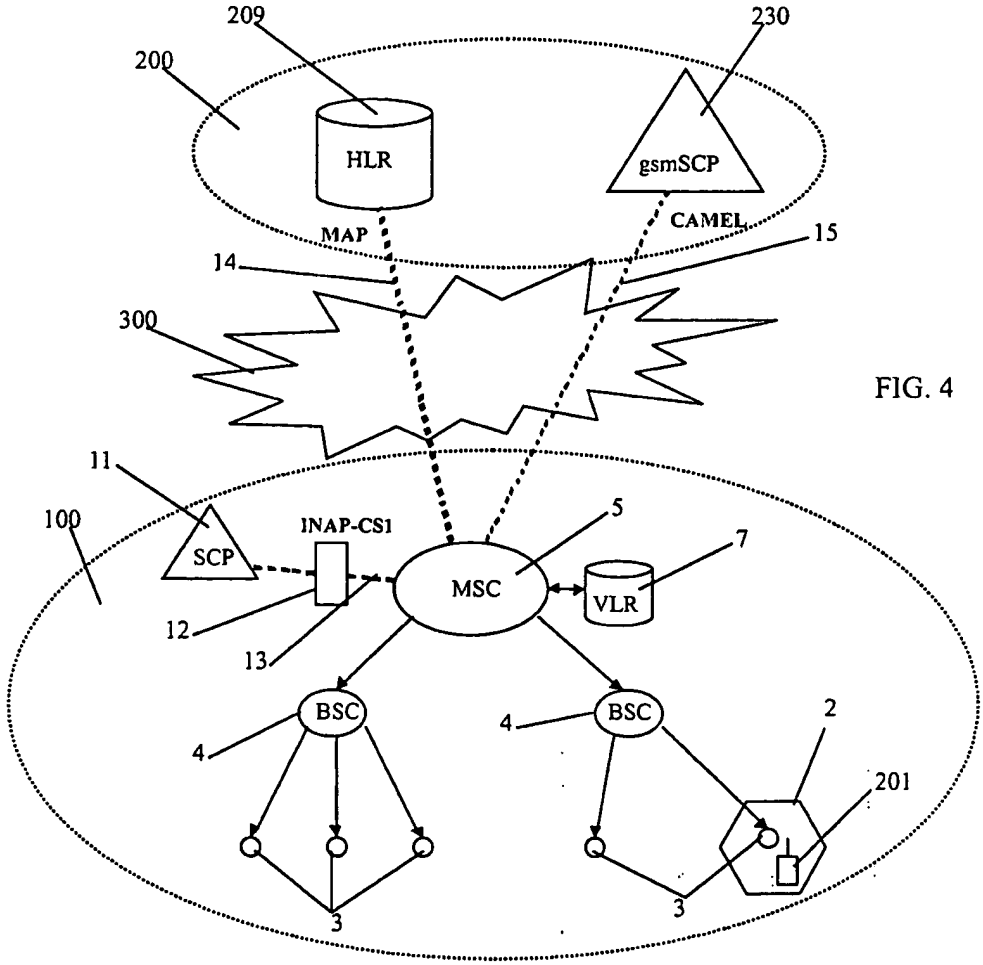

209
230
200
HLR
gsmSCP
MAP
CAMEL
15
14
300
11
100
SCP
INAP-CS1
MSC
5
7
VLR
12
13
BSC
BSC
4
4
2
201
3
3

FIG. 4

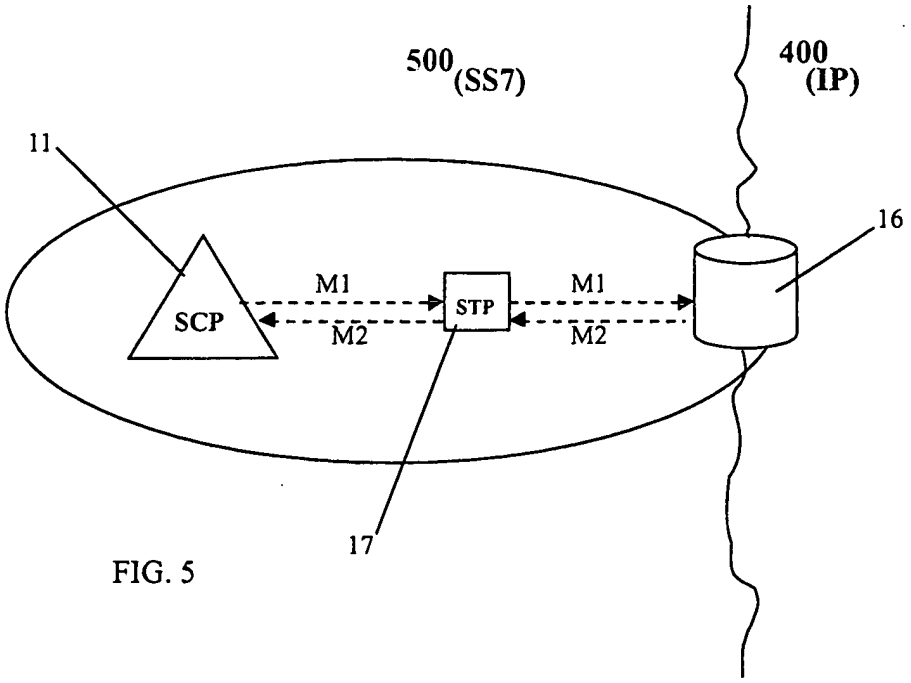

500 (SS7)
400 (IP)
11
16
SCP
M1
M2
STP
M1
M2
17

FIG. 5

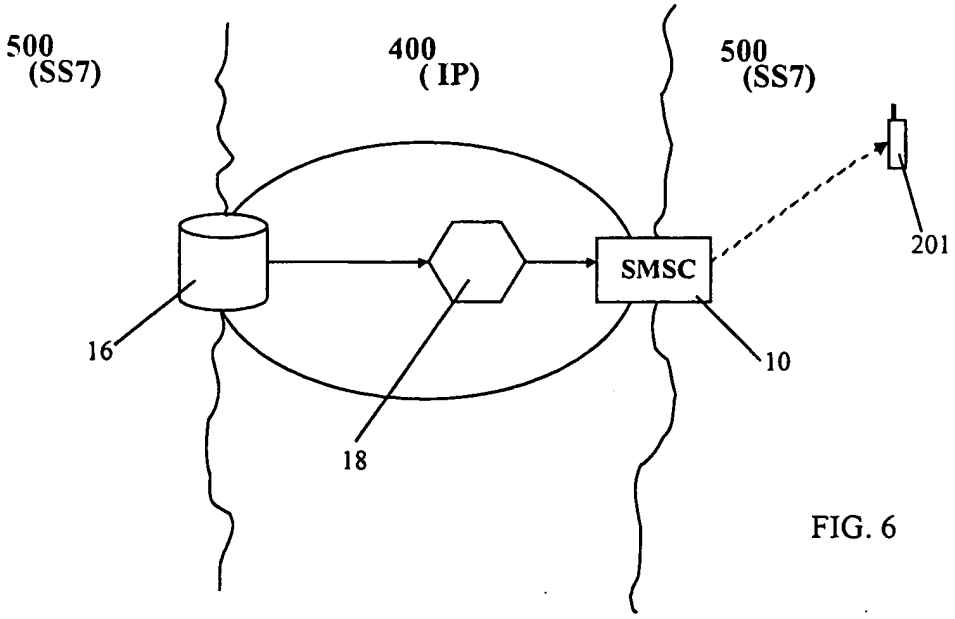

500 (SS7)
400 (IP)
500 (SS7)
201
SMSC
16
10
18

FIG. 6

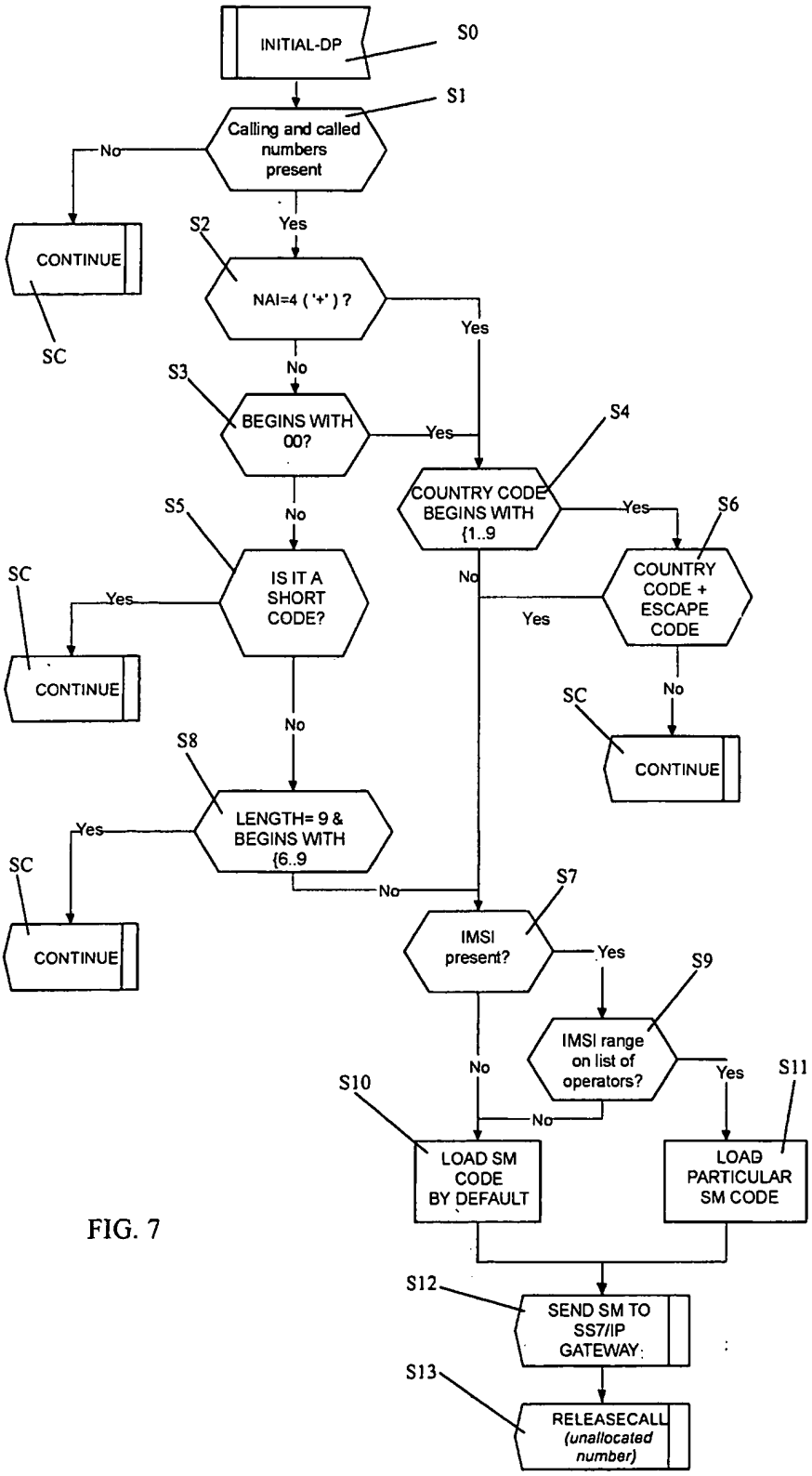
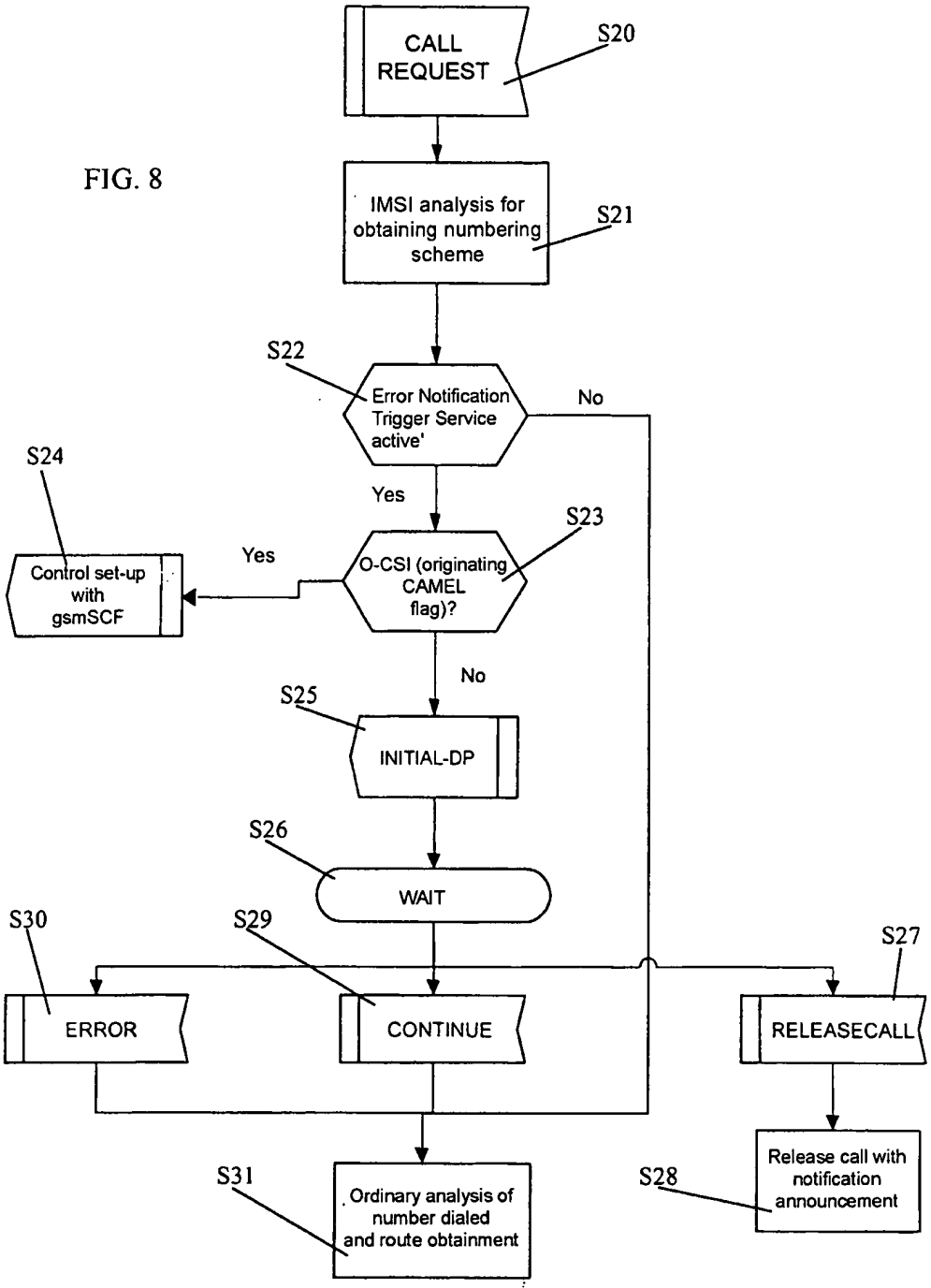

INITIAL-DP
S0
S1
Calling and called numbers present
No
Yes
CONTINUE
SC
S2
NAI=4 ('+')?
Yes
No
S3
BEGINS WITH 00?
Yes
S4
COUNTRY CODE BEGINS WITH {1..9
Yes
S6
No
COUNTRY CODE + ESCAPE CODE
Yes
No
SC
CONTINUE
S5
IS IT A SHORT CODE?
SC
Yes
CONTINUE
No
S8
LENGTH= 9 & BEGINS WITH {6..9
Yes
SC
CONTINUE
No
S7
IMSI present?
Yes
S9
IMSI range on list of operators?
Yes
S11
No
No
S10
LOAD SM CODE BY DEFAULT
LOAD PARTICULAR SM CODE
S12
SEND SM TO SS7/IP GATEWAY
S13
RELEASECALL (unallocated number)

FIG. 7

FIG. 8


CALL REQUEST
S20
IMSI analysis for obtaining numbering scheme
S21
S22
Error Notification Trigger Service active'
No
Yes
S24
S23
Control set-up with gsmSCF
Yes
O-CSI (originating CAMEL flag)?
No
S25
INITIAL-DP
S26
WAIT
S30
S29
S27
ERROR
CONTINUE
RELEASECALL
Release call with notification announcement
S28
S31
Ordinary analysis of number dialed and route obtainment

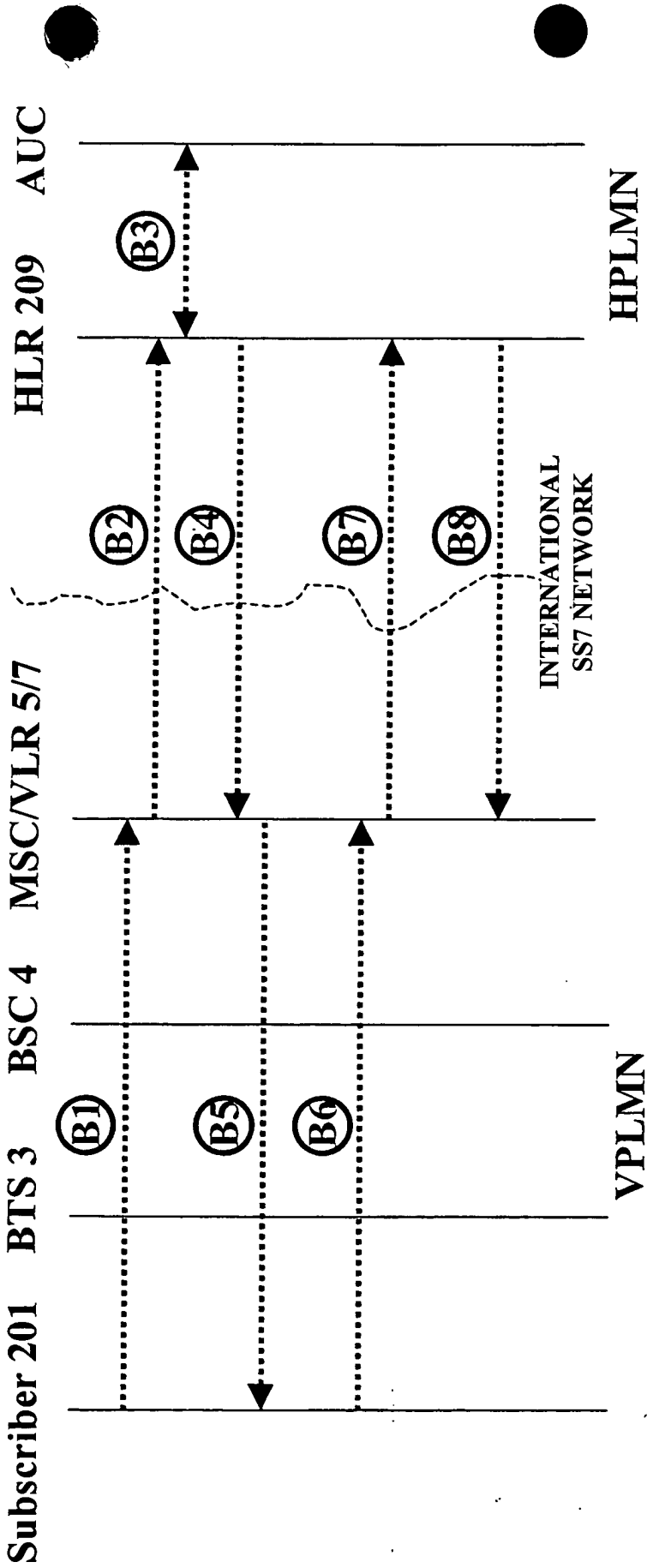

Subscriber 201
BTS 3
BSC 4
MSC/VLR 5/7
HLR 209
AUC
VPLMN
HPLMN
INTERNATIONAL SS7 NETWORK
B1
B2
B3
B4
B5
B6
B7
B8

FIG. 9

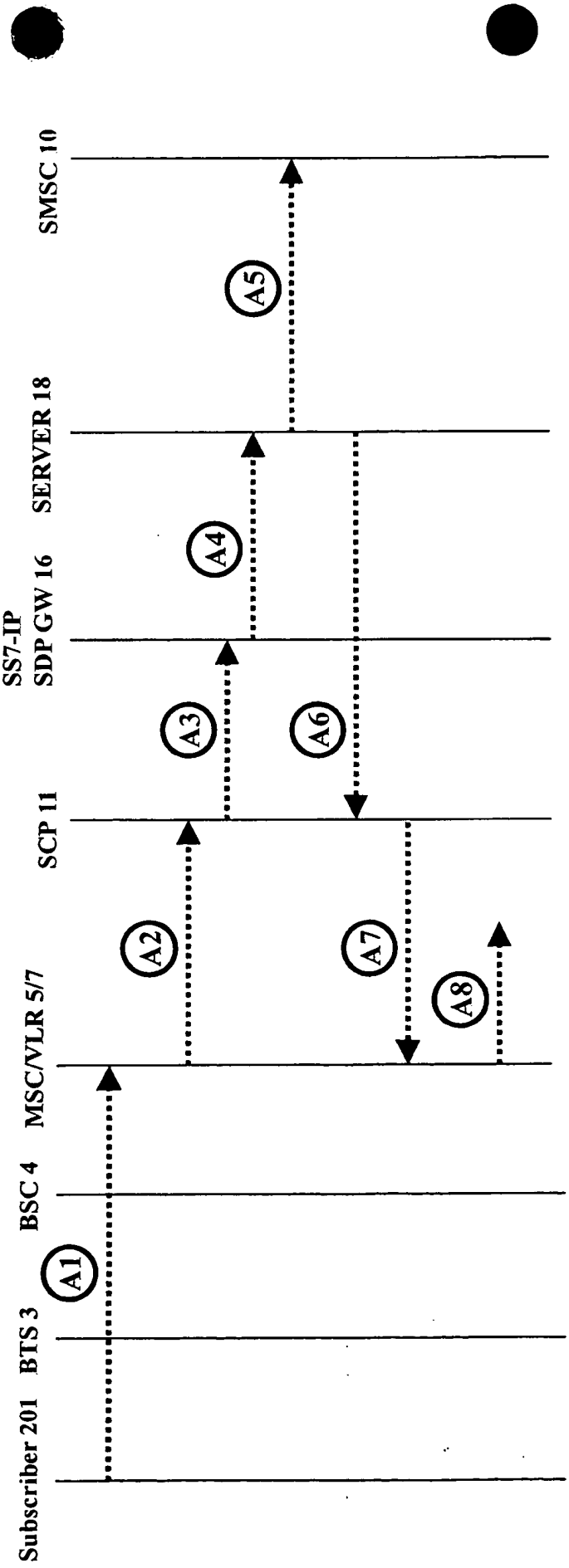

Subscriber 201
BTS 3
BSC 4
MSC/VLR 5/7
SCP 11
SS7-IP
SDP GW 16
SERVER 18
SMSC 10
A1
A2
A3
A4
A5
A6
A7
A8

FIG. 10